

**WHAT IS CLAIMED IS:**

1. A method of enhancing memory in an animal comprising the administration of a therapeutically effective amount of an atypical form of PKC.

5           2. The method of claim 1 wherein said atypical form of PKC is administered in an amount resulting in final concentrations of said atypical form of PKC in brain ranging from about 0.1 to about 10 nanomolar.

10           3. A method of enhancing synaptic transmission in an animal comprising the administration of a therapeutically effective amount of an atypical form of PKC.

15           4. A method of maintaining memory in an animal comprising the administration of a therapeutically effective amount of an atypical form of PKC.

5. A method of treating brain injury in an animal comprising the administration of a therapeutically effective amount of an atypical form of PKC.

20           6. A method of treating spinal cord injury in an animal comprising the administration of a therapeutically effective amount of an atypical form of PKC.

7. The method of any one of Claims 1, 3, 4, 5 or 6 where said atypical form of PKC is PKM $\zeta$ .

25           8. The method of any one of Claims 1, 3, 4, 5 or 6 wherein said atypical form of PKC is PKC  $\iota/\lambda$ .

30           9. A pharmaceutical composition comprising an atypical form of PKC and a pharmaceutically acceptable carrier.

10. The composition of Claim 9, wherein said atypical form of PKC is PKM $\zeta$  or PKC iota/lambda.

11. A method of causing amnesia or decreasing synaptic transmission in an animal suffering from a  
5 traumatic stress disorder, a phobia, a pain syndrome or epilepsy comprising the administration of a therapeutically effective amount of a PKM $\zeta$  inhibitor.

12. The method of claim 11 wherein said PKM $\zeta$  inhibitor is chelerythrine.

10 13. The method of Claim 8 wherein said PKM $\zeta$  inhibitor is myristolated zeta inhibitory pseudosubstrate peptide.

14. The method of claim 12, wherein said inhibitor is a dominant negative or altered form of PKM $\zeta$ ,  
15 or antisense version of PKM $\zeta$ .

15. The method of any one of claims 1, 3-6 and 11 wherein said animal is a human.